Croton mayanus (Section *Eluteria*: Euphorbiaceae), a New Species Endemic to the Yucatán Peninsula, Mexico

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Abstract. A new species belonging to *Croton* L. sect. *Eluteria* Grisebach (Euphorbiaceae) is described from, and endemic to, the Yucatán Peninsula, Mexico. The species is named *C. mayanus* B. L. León & Vester after the Mayan zone where it is mainly found. It is distinguished from *C. niveus* Jacquin, *C. reflexifolius* Kunth, and *C. pseudoniveus* Lundell, the species that it most closely resembles, by its combination of lepidote hairs on the fruit, smooth fruit surface, leaves glabrescent abaxially, and fruiting pedicels 8–13 mm long.

Key words: Calakmul, *Croton*, *Eluteria*, Euphorbiaceae, Yucatán Peninsula.

The genus *Croton* L. belongs to the Euphorbiaceae s. str., one of the most abundant and diverse angiosperm families, with an estimated 6300 species (Wurdack et al., 2005). In the same sense the genus *Croton* is widespread, with 1223 accepted species (Berry et al., 2005), the majority of which are Neotropical (Webster, 1994). Euphorbiaceae s.l. was divided into 40 sections (Webster, 1993). The section *Eluteria* Grisebach is principally distributed in Mesoamerica and the Antilles. It is distinctive within *Croton* for its axillary or pseudoaxillary inflorescences that are often combined with terminal inflorescences, the absence of glands at the base of the lamina, pistillate flowers with petals, and a lepidote indumentum (Webster, 1993). Based on morphological features and geographical distribution, *Croton* sect. *Eluteria* seems to be monophyletic (Paul Berry, pers. comm., 2004), with 12 species validly described (Webster, 1993).

The new species clearly belongs to section *Eluteria*, because it has pseudoaxillary inflorescences (only with small leaves at the base), leaves without glands, pistillate flowers with petals, and lepidote indumentum. It was encountered during fieldwork for an architectural study of *Croton* sect. *Eluteria* on the Yucatán Peninsula, Mexico. The first collections seen by the authors, paratypes from 20 years ago (listed below) were previously determined as *C. niveus* Jacquin, from which it is clearly distinguished by its lepidote hairs on the fruit and glabrescent abaxial leaf. We collected *C. mayanus* B. L. León & Vester in the Mayan zone, Quintana Roo (*H. Vester & B. L. León 1360, 1361, 1362*) in April 2003. One of the specimens (*H. Vester & B. L. León 1361*) presented nearly ripe fruits and staminate flower buds. Leaves were just budding on leafless branches, indicating the species is deciduous, a characteristic that we were also able to see in other *Croton* species (*C. niveus* and *C. fantzianus* F. Seymour, and rarely in *C. arboreus* Millspaugh) of section *Eluteria*. Later, the species was also collected in the more southern neighborhood of the Calakmul Reserve (*B. L. León & H. Vester 108, 109, 110, 113, 114*). All known specimens of this species were collected on the Yucatán Peninsula, which suggests it is endemic there.

Croton mayanus B. L. León & Vester, sp. nov. TYPE: Mexico. Campeche: Mun. Calakmul, Camp. Ecol. "Yaax-che," at 6 km from the main rd. Xpujil–Escarcega toward the ruins of Calakmul, tropical deciduous forest, 216 m, 4 May 2004, *B. L. León & H. Vester 114* (holotype, CIQR; isotypes, CICY, CIQR, DAV, F, MEXU, MICH, MO, OAX, WIS). Figure 1.

Arbor monoica foliis deciduis, ad 10 m alta, sublepidota, stipulis obsoletis, petioli 1.5–3 cm longi. Folia 4.5–9 cm longa, 2.5–5.5 cm lata, lamina ovata, membranacea, subglabra, apice acuminata, basi rotundata, truncata vel subcordata, eglandulosa, margine integra. Racemi bisexuali. Flores masculi pedicello 2 mm longo, sepala 5, petala 5; stamina 10–12(17). Flores feminei pedicello 3–3.5 mm, sepala 5, petala 5; ovarium lepidotum, stylo 3-partito, partibus bifurcatis, laciniatis. Capsula prolata, lepidota, pedicello 13 mm longo. Species foliis infra subglabris, capsula lepidota et pedicello fructuum ad 13 mm longo a congeneris sectionis *Eluteriae* diversa.

Deciduous tree, to 10 m in height, foliage, fruits, and branches with indumentum lepidote, with subentire scales, 0.2 mm diam. (Fig. 1G); external bark with fine fissures, nearly smooth, clear khaki in color; internal bark pink with a ± repugnant smell of resin, and yellow exudate. Leaves ovate, 4.5–9 × 2.5–5.5 cm, alternate (Fig. 1D), entire, apex acuminate, base rounded, truncate to subcordate, palmately veined (the 2 secondary basal veins more pronounced,

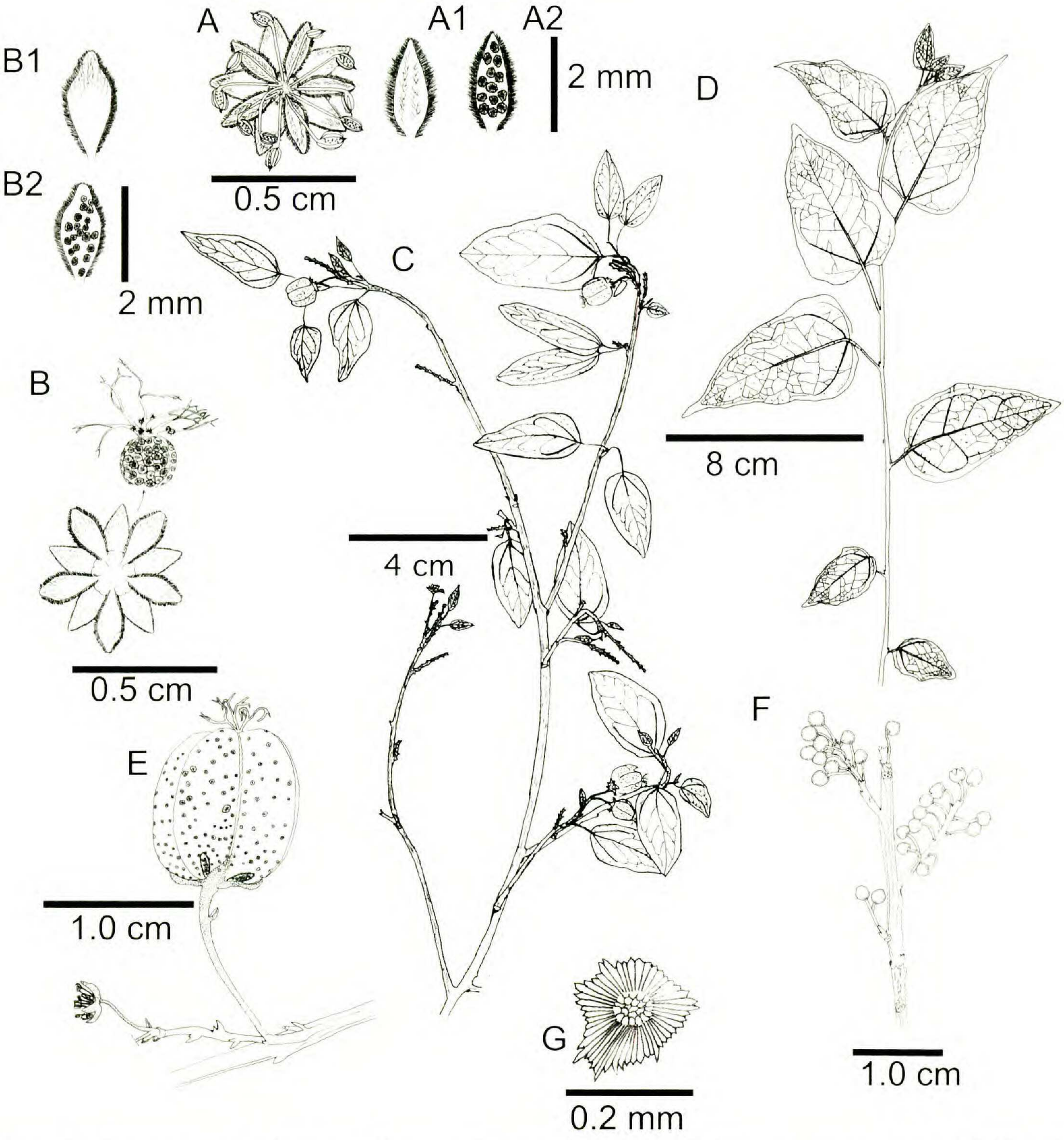

Figure 1. *Croton mayanus* B. L. León & Vester. —A. Staminate flower. —A1. Adaxial staminate petal. —A2. Abaxial staminate petal. —B. Pistillate flower with pistil removed. —B1. Adaxial pistillate petal. —B2. Abaxial pistillate petal. —C. Branch with fruits. —D. Shoot in summer, the veins more accentuated than in reality. —E. Ripe fruit on a mature inflorescence. —F. Inflorescence in spring when the plant has almost no leaves. —G. Scale from the fruit. Drawn from *H. Vester & B. L. León 1360, 1361* and *B. L. León & H. Vester 114* (CIQR).

as described by Webster, 2001), eglandular, glabrescent with age; stipules absent or rudimentary; petiole 1.5–3 cm. Inflorescences terminal or pseudoaxillary 1–2.5 × 0.8–1.3 cm (Fig. 1F), with 1 to 2 mature fruits per inflorescence, a raceme with staminate flowers above and pistillate flowers below or absent. Staminate flowers (Fig. 1A) with pedicels 2 mm, sepals 5, ovate, valvate, abaxially lepidote, 2.3 × 1 mm; petals 5, ovate, abaxially lepidote (Fig. 1A2), adaxially pubescent (Fig. 1A1), 2 × 0.9 mm; stamens 10 to 12(17), filaments inserted in a central disk, anthers 0.4 mm. Pistillate flowers (Fig. 1B) with ovary 3(to 4)-locular and 3-carpellate; pedicels 3–3.5 mm; sepals 5, entire, valvate, eglandular, ovate, 2.3 × 1.2 mm, abaxially lepidote, adaxially pubescent; petals 5, spatulate, elliptic, 2.3 × 1 mm, abaxially lepidote (Fig. 1B2), adaxially pubescent (Fig. 1B1); style exserted, trifurcate, then twice bifurcate, with stellate hairs at its base (Fig. 1B). Fruit (Fig. 1E) a capsule, smooth and lepidote, 9–10 × 8 mm; pedicel up to 13 mm; columnella persistent; seeds 6–7 × 4 mm with dark shiny testa, dorsally

flattened, with a small ventral ridge and carunculus directed to the center.

Habitat and distribution. *Croton mayanus* inhabits forests of Quintana Roo, Yucatán, and Campeche in Mexico from elevations of 10 to 250 m. The specimens in Quintana Roo were found in an ecosystem described by Durán (1986: 53) as "selva baja subcaducifolia con *Pseudophoenix sargentii* [H. Wendland in Sargent]," locally called "sak'alche," on shallow soils with severe water stress during the dry period (January to May), but water accumulating during the rainy season (June to November). The specimens in Campeche were found in a similar area with high drought stress.

Plant architecture. The architectural development corresponds to the Scarrone model (Hallé & Oldeman, 1970). Growth of the primary axis is orthotropic and rhythmic (Hallé et al., 1978), which is visible in the organization of the branches in groups along the axis. Inflorescences are terminal on the shoots, with some on long shoots, but most on short shoots axillary to the leaves (Fig. 1C) but distinguished from axillary inflorescences by the small leaves or leaf scars at the base.

Phenology. Flowering in February to March; fruiting April to June.

Common name. Perezcutz.

Relationships. Specimens of *Croton mayanus* seen at MEXU were previously determined as *C. niveus* or *C. reflexifolius* Kunth but did not fully agree with the description of either species. Fruits of *C. niveus* have a smooth surface with stellate indumentum and leaves with a silvery-lepidote surface abaxially. Fruits of *C. reflexifolius* have a clearly echinate surface with lepidote indumentum, and the leaves are silvery-lepidote abaxially. Fruits of *C. mayanus* have a smooth surface with lepidote indumentum (Fig. 1E), and the leaf is glabrescent abaxially.

Croton mayanus is similar to *C. pseudoniveus* Lundell, but the latter is distinct in its shorter pedicel of the fruit (2–6 mm vs. 8–13 mm), the scales at the fruit surface with a prominent center, giving it a semituberculate aspect, and the silvery-lepidote abaxial surface of the leaves.

Paratypes. MEXICO. **Campeche:** Mun. Calakmul, 1 km W of Plan de San Luis, rd. to Conhuas, Km 134, Hwy. Escarcega–Chetumal, *E. Lira 433* (MEXU); 1 km W of Km 19 on rd. to ruins of Calakmul, *E. Lira 1100* (MEXU); Mun. Calakmul, 1.5 km W of Plan de San Luis, on rd. to Conhuas, *E. Martínez 30835* (MEXU); Mun. Calakmul, rd. to ruins of Calakmul, 16 km from crossing w/Hwy. Chetumal–Escárcega, *B. L. León & H. Vester 108, 109, 110* (CICY, CIQR, DAV, F, MEXU, MO, MICH, OAX, WIS); Mun. Calakmul, rd. to ruins of Calakmul, 6 km from crossing w/Hwy. Chetumal–Escárcega, *B. L. León & H. Vester 113* (CIQR, DAV, MEXU, WIS). **Quintana Roo:** Mun. Carrillo Puerto, 4 km from Vigía Chico to Carrillo Puerto, *R. Durán & I. Olmsted 859* (MEXU); Mun. Solidaridad, footpath to Decovil, 200 m S of the crossing w/Hwy. Cancun–Tulum, W, *Moreno 508* (MEXU); Nat. Park Xel-Ha, *Marmolejo 1193* (MEXU); Mun. Felipe Carrillo Puerto, X-Hazil, footpath Pemex, *H. Vester & B. L. León 1360, 1361, 1362* (CIQR, DAV, WIS), *B. L. León 065, 066, 067* (MEXU, WIS); rd. Vigía Chico to Carrillo Puerto, 4 km before crossing w/rd. to Tres Reyes, *B. L. León & H. Vester 118* (CIQR, DAV, MEXU, MO, WIS). **Yucatán:** 6 km W of Timun, on rd. to Dzitas, *E. Cabrera & Cabrera 11250* (MEXU); Mun. Tecax, between Xul & Benito Juárez, *R. Darwin 2510* (CICY, MEXU).

Acknowledgments. We thank the International Association for Plant Taxonomy (IAPT) for a research grant; the Consejo Nacional de Ciencia y Tecnología (CONACyT) for a travel grant to visit the MO, F, DAV, and WIS herbaria; the Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO) for their resources for fieldwork (project BJ002); Fernando Chiang for his advice on the Latin translation; and Grady Webster and Paul Berry for their assistance with type specimens as well as their advice and fruitful discussions.

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